Elimination of Low Order Harmonics in Multilevel Inverter Using Nature-Inspired Metaheuristic Algorithm

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Abstract : Nature-inspired metaheuristic algorithms, particularly those founded on swarm intelligence, have attracted much attention over the past decade. Firefly algorithm has appeared in approximately seven years ago, its literature has enlarged considerably with different applications. It is inspired by the behavior of fireflies. The aim of this paper is the application of firefly algorithm for solving a nonlinear algebraic system. This resolution is needed to study the Selective Harmonic Eliminated Pulse Width Modulation strategy (SHEPWM) to eliminate the low order harmonics; results have been applied on multilevel inverters. The final results from simulations indicate the elimination of the low order harmonics as desired. Finally, experimental results are presented to confirm the simulation results and validate the efficaciousness of the proposed approach.

Keywords : firefly algorithm, metaheuristic algorithm, multilevel inverter, SHEPWM
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